

Four Species of Scuttle Fly (Diptera: Phoridae) From Dominican Amber

R. H. L. DISNEY

Field Studies Council Research Fellow, University Museum of Zoology,
Cambridge, CB2 3EJ, U.K.

Abstract.—Four species of Phoridae, *Dohrniphora poinari* n. sp., *Megaselia amberae* n. sp., *M. bernsteinae* n. sp. and *M. dominicana* n. sp. are described from Dominican amber dated 30 m.y. B.P. \pm 10 m.y. (Oligocene, or possibly late Eocene or early Miocene). Morphologically these species resemble living species.

Dr. George O. Poinar, Jr., of the University of California, Berkeley, asked me to examine four specimens of Phoridae preserved in Dominican amber dated 30 m.y. B.P. \pm 10 m.y. They are most probably Oligocene but are possibly late Eocene or early Miocene. All four specimens prove to be undescribed females. In dealing with the present-day fauna one would not describe species on the basis of females alone, unless they were highly distinctive. In the case of fossils more than 10 m.y. B.P. in age this precaution can be safely ignored; although there remains a low probability of a male of one of these species being discovered and, because of sexual dimorphism, treated as a distinct species in error.

The four species are described below:

Dohrniphora poinari sp. nov.

A medium sized species with wing length about 1.2–1.4 mm. Scutum yellowish with contrasting dark, brownish, scutellum which is yellowish at margins. Abdominal tergites dark with median yellowish band, which expands anteriorly on each tergite.

Legs yellowish to brownish yellow. Hind-tibia with a single dorsal hair palisade and no pre-apical bristles. Mid-tibia apparently without dorsal hair palisade but with a pair of bristles in basal quarter and a short anterior pre-apical bristle. Fore-tibia with five near-dorsal bristles, with 2–5 being short.

Wings with costal index about 0.6. Haltere knob yellowish. Third antennal segment pale brownish, the two-segmented palps yellow with short apical bristles. Proboscis not elongated, labella apparent and a little pointed anteriorly. Frons with chaetotaxy much as in the present-day cosmopolitan *Dohrniphora cornuta* (Bigot) but with no apparent anterolaterals, although on the most visible (left) side there is what appears to be a basal scar in the appropriate position.

Thoracic chaetotaxy with a pair of pre-scutellars, intra-alars and pre-alar bristles. A humeral bristles and three notopleurals present. Fine hairs present on mesopleuron. Scutellum with an anterior pair of hairs and a posterior pair of bristles.

Holotype female. D-7-51.

Affinities. While a number of species of fossil *Dohrniphora* have been described from Baltic amber (e.g. Brues, 1939), these have all been subsequently transferred to

the closely related genus *Diplonevra* Lioy (Borgmeier, 1968). The present-day Neotropical species are dealt with by Borgmeier (1960, 1961), Borgmeier & Prado (1975), Prado (1976) and Disney (1983a). These keys and descriptions deal primarily with the males. However the lack of bristles on the hind tibia and short proboscis will distinguish *D. poinari* from the majority of present day species. The long costal index, contrasting colors of the scutum and scutellum and single pair of scutellar bristles will distinguish it from the rest.

Genus *Megaselia* Rondani 1856

Megaselia is the largest genus of Phoridae in the world today, with some 1400 described species. However most species remain undescribed and estimates (Disney, 1983b) suggest that the true total lies between 5,000 and 20,000 species. The present day Neotropical species are covered by Borgmeier (1962, 1969a, 1969b and 1971) and Disney (1982).

The three species described below are evidently closely related and share a number of features. These include a large Costal Index (0.5 or more), short coastal cilia (<0.1 mm), Vein Sc confluent with R1, Vein 3 forked, Mesopleuron bare, haltere knob mainly yellowish and a posterior pair of bristles and anterior pair of hairs on the scutellum. They thus belong to a sub-section of Borgmeier's (1962) Group VII.

Eight species of *Megaselia* have been described from Baltic amber and two species from Zanzibar copal (Borgmeier, 1968). Whilst all the descriptions are inadequate by present-day standards none agree with the three species from the Dominican amber described below.

Megaselia amberae sp. nov.

A medium to large species (wing length 2.63 mm). Frons black. Scutum and scutellum dusky orange yellow. Antennae orange brown. Abdominal tergites appear to be a bit darker (but considerably obscured in specimen). The Coastal Index is 0.54–0.55. The costal ratios are 4.1:1.8:1. The costal cilia measure 0.07–0.09 mm. There appears to be only two notopleurals, otherwise the chaetotoxy seems to be the standard (ground plan?) for the genus. The palps are orange yellow in color with standard bristles. The last two segments of the fore tarsus are subequal in length. Legs yellowish with a dark apex to hind femur.

Holotype female. D-7-54.

Megaselia bernsteinae sp. nov.

A little smaller than the previous species (wing length 2.08 mm). Frons black, scutum and scutellum yellow. Antennae brown. Abdominal tergites dark greyish brown. Tergites 5 with posterior margin concave. Tergite 6 with anterior margin notched in middle third.

The costal index is 0.552. Costal ratios 3.64:1.56:1. Costal cilia 0.065–0.075 mm long. Only two notopleurals present, otherwise chaetotaxy seems to be standard. Palps not visible in specimen. Legs yellowish except for apex of hind femur.

Holotype female. D-7-52.

Megaselia dominicana sp. nov.

A little smaller than the above species (wing length 1.60 mm). Frons brown, scutum and scutellum yellowish brown. Antennae brown. Abdominal tergites brown

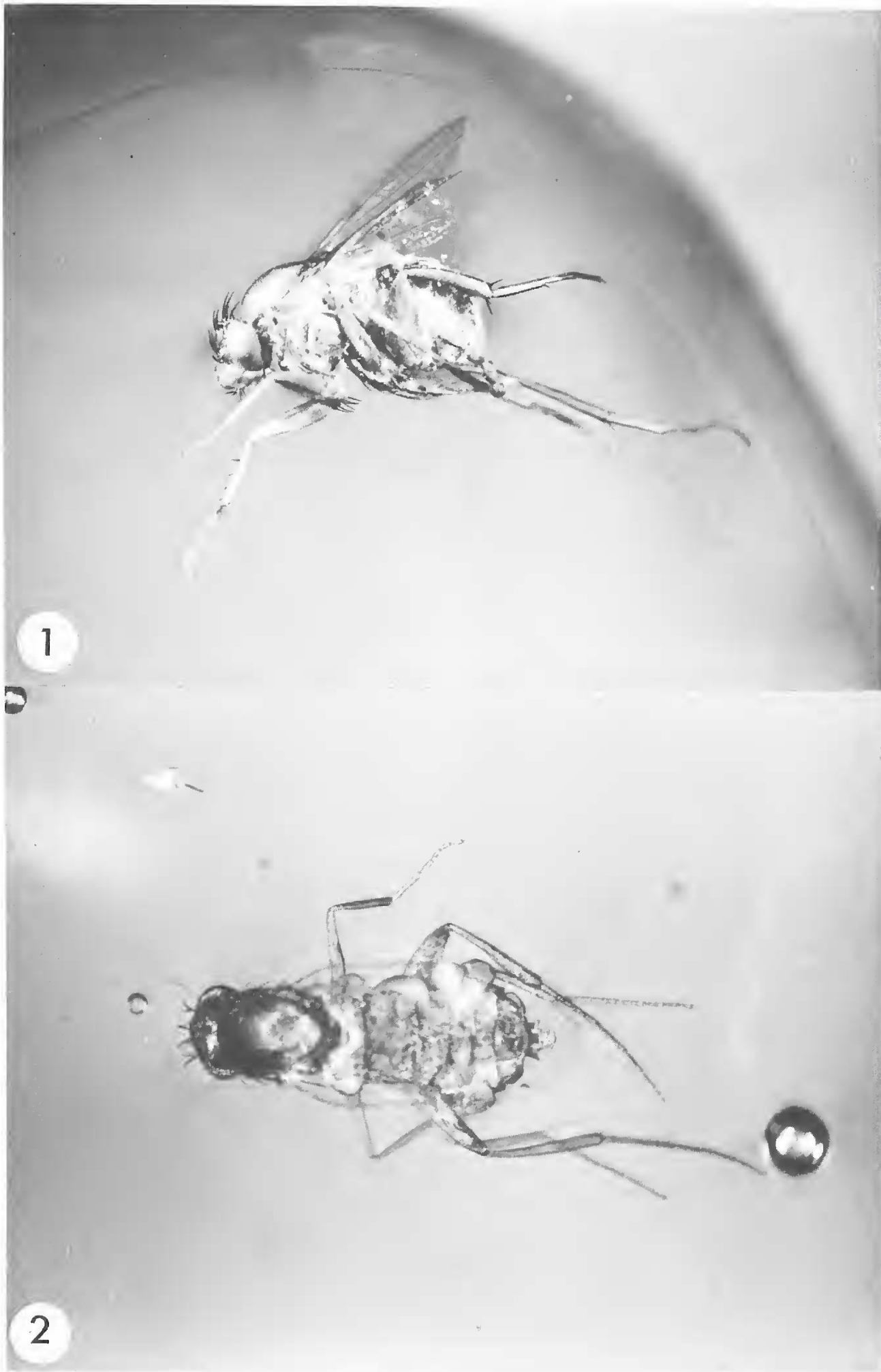


Figure 1. Lateral view of *Dohrniphora poinari* sp. n. in amber from the Dominican Republic. Figure 2. Dorsal view of *Megaselia dominicana* sp. n. in amber from the Dominican Republic.

and somewhat narrow after tergite 2. Tergite 5 with concave notch in middle of hind margin. Tergite 6 with side and rear margins forming a continuous semicircle.

Costal Index 0.497. Costal ratios 3.56:1.48:1. Costal cilia 0.50–0.051 mm long. Three notopleurals present and rest of chaetotaxy appears to be standard. Femora somewhat brownish, otherwise legs yellowish. Tarsal segment 5 of front leg about $1.25 \times$ length of 4. Palps not visible in specimen.

Holotype female. D-7-53.

DISCUSSION

The four species described above belong to the two genera which dominate Neotropical forest Phorid faunas today. Indeed on morphological grounds all appear modern in appearance. However our knowledge of the ground-plan characters of both genera is still extremely slight. In the *Megaselia* species the long costa, short costal cilia and vein Sc confluent with R1 are probably all plesiomorphic features. All, however, are not uncommon in the genus today. The genus *Dohrniphora* is almost certainly closer to the ground-plan of the Phoridae than *Megaselia*, for example in possessing a two segmented palp. *D. poinari* in lacking a hair palisade on the mid-tibia and pre-apical bristles on the hind tibia stands with a minority of the species in the genus today. The relatively short proboscis is almost certainly plesiomorphic for the genus.

The *Megaselia* specimens all have balloon-like distensions of the abdominal pleura. These are evidently post-mortem changes and not structural features.

Specimens are in the collection of G. O. Poinar, Jr., Berkeley, California and will eventually be deposited at the American Museum of Natural History, New York.

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